Setting up a TNTscript Image Provisioning System

This sample web application using TNTscript allows web users to extract and download image and elevation data you post on your website.

You can allow provisioning from one or more images and/or elevation datasets. The Provisioning application provides a web interface using WAMP (Windows, Apache, MySQL, and PHP) that allows registered users visiting your provisioning website to select a dataset from which to extract, define the extraction area, and order the data. MySQL database tables are used to store information about the available data layers and user registration information. Each dataset you provide as an extraction source must be a raster object in a TNTgis Project File; this object can be a standard TNTgis raster or a tiled TNTgis raster linked to external tile files. PHP scripts are used to manage the web interface, start TNTscript, and pass the extraction information to an SML script that performs the extraction and sends an e-mail notification with download link to the user.

The web interface uses Bing Maps aerial imagery as a default geographic reference for image selection. The area of each of the available image layers can be indicated in the browser view by a KML file containing a boundary polygon and/or by a web tileset that you prepare from your source image and post on your website. If neither of these is provided, a box indicating the rectangular geographic extents of the image layer is shown as an overlay on the Bing Maps imagery.

The Provisioning application has been developed and tested using WampServer 2.5, which includes the following components: Apache 2.4.9, MySQL 5.6.17, PHP 5.5.12, PHPMyAdmin 4.1.14, SqlBuddy 1.3.3, XDebug 2.2.5. Other versions of WAMP such as Uniform Server and XAMPP with similar component versions may also be used, but may require adjustments in the WAMP configuration.

Setup Steps:

1) Copy the entire contents of the *Provision* folder (created by decompressing Provision.zip) to the hard drive on the web server that will be running the Provisioning System.

2) For each image data set that you wish to make available for provisioning, note the object name, cell size, and the distance units used in the coordinate reference system. Use the Details tabbed panel in the Coordinate Reference System window to get the EPSG identifier for the coordinate reference system. Determine the rectangular extents of the image data in WGS84 Geographic coordinates (longitude/latitude; if you are planning to create an image tileset for display in the browser during extract selection, you can get these extents from the tileset TSD file).

3) Copy each of the source image data sets to the web server. For each one, note the full directory path to the Project File.

4) Install TNTscript on the web server. For ease of use you may wish to modify your system's PATH variable to include the path to the TNTscript installation directory.

5) Download and install WAMP (e.g. WampServer. http://www.wampserver.com/en/).

6) Optional: use the Export Raster Tilesets process in TNTmips to create a web tileset for each image dataset to be shown in the browser during selection of an extraction area. Copy each tileset to the WAMP webspace (e.g. the wamp/www directory for WAMPserver). Note the directory path to the *_Tiles folder for each tileset.

7) Optional: create a vector polygon outlining the boundary of each provisioning dataset and export each to a KML file to be shown in the browser during selection of an extraction area. Copy the KML files to the WAMP webspace and note the directory path to each KML file.

8) Launch PHPMyAdmin from your WAMP menu; this application opens in your default web browser. In PHPMyAdmin click on the Import tab. You will use this panel to select and run SQL scripts to create two databases and three tables. The following SQL files are provided in the Provision folder:

- CreateUsers.sql: creates a provisioners database and table to record registered users.
- CreateGeodataTable.sql creates a *provisioningdata* database and *geodata* table to list the image datasets.
- CreateJobs.sql creates a *jobs* table in the *provisioningdata* database to log the provisioning jobs.

For each of these SQL files, press the Browse icon button in the PHPMyAdmin Import panel and navigate to the SQL file. Accept the default settings and press the Go icon button at the bottom of the panel. You should then see an "Import successfully finished" message. The new databases are added to the Database panel in PHPMyAdmin.

9) In the PHPMyAdmin Databases panel, left-click on the *provisioningdata* database entry in the list. A "Structure" panel appears with *geodata* and *jobs* table entries. Click on the *geodata* entry to open the table. In the next step you will add a record to this table for each provisioning dataset; the table is provided with two sample records as models (the 0 value in the allowProvisioning field prevents these records from being included in the Provisioning application). When you add a dataset record you will need to provide values for the fields in the table:

id:	a unique identifier for the image dataset
title:	dataset label shown in the Provisioning application
file_path:	filepath to the RVC file containing the image
object:	object name of the image in the RVC file
boundary:	(optional) webspace URL to the KML boundary file for the dataset if present
tileset_url:	(optional) webspace URL to the web tileset *_Tiles directory if present
minzoom:	(optional) minimum zoom level in the web tileset if present
maxzoom:	(optional) maximum zoom level in the web tileset if present
xmin:	minimum longitude extent of the data
ymin:	minimum latitude extent of the data
xmax:	maximum longitude extent of the data
ymax:	maximum latitude extent of the data
cellsize:	numeric cell size of the image
units:	units of the cell size (meters or feet)
allowProvisioning: set to 1 to allow, 0 to deny	
category:	set type of data: imagery or elevation
crs:	EPSG code for the dataset coordinate reference system

10) Click on the Insert tab in PHPMyAdmin to show a form for creating a new dataset record. The form has a row for each field; enter the appropriate value for each field in the Value column. When you have entered all of the values, press the Go icon button on the form; PHPMyAdmin returns to the Browse view of the table and shows the new record. You can change most field valued if needed by double-clicking on them in the Browse view; press the Edit link for the record to reopen the full record form.

11) Edit the *sources.html* file (in the *provisioning* folder) to add a list item for each of your datasets with the unique id for each, using the sample entries as a guide.

12) Copy the *provisioning* folder to the root directory of your webspace (e.g. C:\wamp\www\provisioning).

13) Create a *Jobs* folder in your webspace (e.g. C:\wamp\www\Jobs); in it create subfolders *DoneJobs* and *FailedJobs*.

14) Copy the *ProvisioningSML* folder to the root level of the web server hard drive (e.g. C:\ProvisioningSML). You will need to edit the contained ProvisionTNTscript.sml if you use different paths for the *provisioning* and/or *Jobs* folders. Also verify that the assigned values for the variables start\$, finish\$, and errpath\$ in the script include the correct paths to the PHP executable in your WAMP installation.

15) Edit the *settings.php* text file in the *provisioning* folder to provide your server name, password, and the correct paths to the ProvisionTNTscript and Jobs folders.

16) Set up a Windows scheduled task to periodically remove old files by calling the cleanjobs.bat file in the *Provision* folder. You might set this task to run daily, weekly, or monthly depending on the number of provisioning jobs processed.

17) If you are creating a separate provisioning web site, set the home page URL to the Provisioning folder. If you are setting up a provisioning page on a larger web site, create a link on your site to the Provisioning folder. This URL loads the index. php file in that folder; this script file creates the web page with the provisioning interface, including registration, login, area selection, and ordering.

18) You may wish to edit the index.php file to customize the provisioning page (*e.g.* add your company logo and a title), provide instructions for use, or a link to a separate instruction page.